

Table 1

Organic Compound (Additive)	Abbr.	Reduction Potential (vs. Lithium metal)
Vinylene carbonate	VC	0.81 V
1,3-Propanesultone	PS	0.83 V
1,4-Butanesultone	BS	0.80 V
1,4-Butanediol dimethane sulfonate	BDDMS	0.81 V
Ethylene glycol Dimethane sulfonate	BGDMS	0.81 V
Methyl propargyl carbonate	MPGC	0.82 V
Phenylacetylene	PA	0.81 V
Benzaldoxime methylcarbonate	BAOMC	1.78 V
Divinylsulfone	VS	1.45 V

IN THE CLAIMS

Please cancel claims 1, 3-15 and 17-29

Please add the following new claims:

30. (new) A non-aqueous electrolytic solution comprising at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, in an amount of 0.1 to 4 weight % for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 V, and

in which the former organic compound is vinylene carbonate and the latter organic compound is selected from the group consisting of a sultone compound, a sulfonate compound, phenylacetylene, and methyl propargyl carbonate.

31. (new) The non-aqueous electrolytic solution of claim 30, in which the latter organic compound is 1,3-propanesultone or 1,4-butanessultone.

32. (new) The non-aqueous electrolytic solution of claim 30, in which the cyclic carbonate is selected from the group consisting of ethylene carbonate, propylene carbonate, and butylene carbonate, and the chain carbonate is selected from the group consisting of diethyl carbonate, diethyl carbonate, methyl ethyl carbonate, and methyl isopropyl carbonate.

33. (new) A non-aqueous electrolytic solution comprising at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, in an amount of 0.1 to 4 weight for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 V, and

in which the former organic compound is 1,3-propanesultone or 1,4-butanedisulfone and the latter organic compound is selected from the group consisting of 3,4-butanediol dimethane sulfonate, ethylene glycol dimethane sulfonate, methyl propargyl carbonate, and phenylacetylene.

34. (new) The non-aqueous electrolytic solution of claim 33, in which the former organic compound is 1,3-propanedisulfone.

35. (new) The non-aqueous electrolytic solution of claim 33, in which the cyclic carbonate is selected from the group consisting of ethylene carbonate, propylene carbonate, and butylene carbonate, and the chain carbonate is selected from the group consisting of dimethyl carbonate, diethyl carbonate, methyl ethyl carbonate, and methyl isopropyl carbonate.

36. (new) A non-aqueous electrolytic solution comprising at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, and an amount of 0.1 to 4 weight % for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 V, and

in which the former organic compound is divinylsulfone and the latter organic compound is benzaldoxime methylcarbonate.

37. (new) The non-aqueous electrolytic solution of claim 36, in which the cyclic carbonate is selected from the group consisting of ethylene carbonate, propylene carbonate, and butylene carbonate, and the chain carbonate is selected from the group consisting of diethyl carbonate, diethyl carbonate, methyl ethyl carbonate, and methyl isopropyl carbonate.

38. (new) A non-aqueous lithium secondary battery which comprises a positive electrode comprising lithium complex oxide, a negative electrode comprising graphite, a non-aqueous electrolytic solution containing an electrolyte salt in a non-aqueous solvent, and a separator, in which the non-aqueous electrolytic solution comprises at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, in an amount of 0.1 to 4 weight % for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 v, and

in which the former organic compound is vinylene carbonate and the latter organic compound is selected from the group consisting of a sultone compound, a sulfonate compound, phenylacetylene, and methyl propargyl carbonate.

39. (new) The non-aqueous lithium secondary battery of claim 38, in which the latter organic

compound is 1,3 propanesultone or 1,4-butanedisultone.

40. (new) A non-aqueous lithium secondary battery which comprises a positive electrode comprising lithium complex oxide, a negative electrode comprising graphite, a non-aqueous electrolytic solution containing an electrolyte salt in a nonaqueous solvent, and a separator, in which the non-aqueous electrolytic solution comprises at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, in an amount of 0.1 to 4 weight W for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 V, and

in which the former organic compound is 1,3-propanedisultone or 1,4-butanedisultone and the latter organic compound is selected from the group consisting of 1,4-butanediol dimethane sulfonate, ethylene glycol dimethane sulfonate, methyl propargyl carbonate, and phenylacetylene.

41. (new) The non-aqueous lithium secondary battery of claim 40, in which the former organic compound is 1,3-propanedisultone.

42. (new) A non-aqueous lithium secondary battery which comprises a positive electrode comprising lithium complex oxide, a negative electrode comprising graphite, a non-aqueous electrolytic solution containing an electrolyte salt in a nonaqueous solvent, and a separator, in which the non-aqueous electrolytic solution comprises at least two organic compounds dissolved in a solvent comprising a cyclic carbonate and a chain carbonate, in an amount of 0.1 to 4 weight % for each compound,

in which both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates,

in which one of the organic compounds has a reduction potential equal to a reduction

potential of another organic compound or has a reduction potential lower or higher than a reduction potential of another organic compound by a potential of less than 0.4 v, and

in which the former organic compound is divinylsulfone and the latter organic compound is benzaldoxime methylcarbonate.